Facility Name: **Cherokee Brick & Tile Company**
City: Macon
County: Bibb
AIRS #: 04-13-021-0167

Application #: TV-509549
Date Application Received: October 7, 2020
Permit No: 3251-021-0167-V-05-0

Program	Review Engineers	Review Managers
SSPP	Jon Howard	Hamid Yavari
ISMU	Marie Miller	Dan McCain
SSCP	Daniel Slade	Steve Allison
Permitting Program Manager		Eric Cornwell

Introduction

This narrative is being provided to assist the reader in understanding the content of referenced operating permit. Complex issues and unusual items are explained here in simpler terms and/or greater detail than is sometimes possible in the actual permit. The permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

1. Facility Name: Cherokee Brick & Tile Company

2. Parent/Holding Company Name: Cherokee Brick & Tile Company

3. Previous and/or Other Name(s): None

4. Facility Location

3250 Waterville Road
Macon, Georgia 31206

5. Attainment, Non-attainment Area Location, or Contributing Area

The facility is located in an attainment area for all criteria pollutants.

B. Site Determination

This facility is adjacent to Macon Walker Road landfill ("the landfill"), and leases landfill gas (LFG) usage rights from the landfill. While the facility uses all LFG from the landfill in its LFG treatment system and brick kilns, the two facilities are not under common control and hence are separate sites under Title V rules. There are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/ Effectiveness	Purpose of Issuance
3251-021-0167-V-04-0	04/21/2016	Title V Renewal
3251-021-0167-V-04-1	12/13/2018	Amendment to add four Dry Injection Fabric Filters (LKDF01, LKDF02, AKDF01 & AKDF02) and remove the Packed Tower Dry Lime Adsorber (PCD01).

D. Process Description

1. SIC Codes(s)

3251

The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes.

Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the language herein shall control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

2. Description of Product(s)

This facility manufactures a variety of clay bricks.

3. Overall Facility Process Description

Raw clay material is surface mined and transported to the plant by dump truck. These include clay from the Company's mines, but also granite dust and off-color kaolin. The raw material is fed to the primary crusher and a hammer mill for crushing and screening to produce an easier material to mix. The screened clay is transported by conveyor belt to a mixing area. The clay is mixed with water and other additives and fed through an extrusion machine. After being sand coated and textured, the extruded column is subsequently cut into green brick. Green brick are stacked on kiln cars and placed in a holding room where the moisture content is typically lowered slightly. From the holding room, kiln cars are moved to one of four dryers. The purpose of the dryer is to further reduce the moisture content of the bricks. The dryer is heated with waste heat from the cooling section of the kiln. Finally, dried brick are moved from the dryers to one of four kilns. Final evaporation of free water, dehydration, oxidation, vitrification, flashing, and cooling of bricks occurs in the kilns. The primary fuel for the Allied kilns and dryers is natural gas and the primary fuel for the Lingl kilns is landfill gas with propane as curtailment back-up. The total landfill gas available will be used in the kilns, although due to changes in operations, the percentage in each may vary. Exhaust from the Allied kiln exits to dry injection fabric filters. Exhaust from the Lingl kilns exits ductwork to dry injection fabric filters. Brick exiting the kilns are packaged and moved to outside storage prior to distribution. Some brick are shipped by rail. Additionally, Cherokee Brick & Tile has a landfill recovery facility as part of our operations. The landfill recovery gas is used to supply fuel to burn in the kilns.

Cherokee Brick & Tile Co. receives landfill gas from The Macon Walker Road Landfill. The landfill currently leases its landfill gas (LFG) rights to Cherokee Brick & Tile Co. located immediately next to the landfill. Cherokee Brick & Tile Co. operates and maintains landfill Gas Collection and Control System (GCCS) on its property. The landfill gas is treated (compressed, de-watered, and dry filtered) prior to being burned in the plant's kilns. This facility operates 24 hours per day, 7 days per week and utilizes 100 percent of the landfill gas extracted from the landfill.

4. Overall Process Flow Diagram

The facility provided a process flow diagram in their Title V permit application.

E. Regulatory Status

1. PSD/NSR

The facility is minor source under pertinent PSD/NSR source.

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	✓	✓		
PM_{10}	✓	✓		
$PM_{2.5}$	✓	✓		
SO_2	✓	✓		
VOC	✓			✓
NO_x	✓	✓		
CO	✓	✓		
TRS	n/a			
H_2S	n/a			
Individual HAP	✓			✓
Total HAPs	✓			✓
Total GHGs	✓	✓		

3. MACT Standards

The facility is no longer major for HAP emissions, so it is not subject to 40 CFR Part 63, Subpart JJJJJ, "National Emission Standards for Hazardous Air Pollutants for the Brick and Structural Clay Products", i.e., BSCP MACT.

4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	No
Program Code 8 – Part 61 NESHAP	No
Program Code 9 - NSPS	Yes
Program Code M – Part 63 NESHAP	Yes
Program Code V – Title V	Yes

II. Facility Wide Requirements

A. Emission and Operating Caps:

None applicable.

B. Applicable Rules and Regulations

None applicable.

C. Compliance Status

The facility did not report any compliance problems in the application.

D. Permit Conditions

Condition 2.1.1 sets a facility wide requirement for any single hazardous air pollutant (HAP) in an amount equal to or exceeding 10 tons during any 12-consecutive months, or any combination of such listed pollutants in an amount equal to or exceeding 25 tons during any 12-consecutive months. This is for Major Source Avoidance.

III. Regulated Equipment Requirements

A. Brief Process Description

Raw clay material is transported along with granite dust and off-color kaolin to the facility via truck. The raw material is crushed, screened, and sized as appropriate through the use of Hammer Mill Nos. 1 and 2 as well as Primary Crusher PC01. The screened clay is transported by a conveyor belt to a mixing area where the clay is mixed with water and other additives and fed through an extrusion machine where is sand coated and textured. The extruded clay column is subsequently cut into green brick. Green brick is stacked on kiln cars and placed in a holding room where the moisture content is typically lowered slightly. From the holding room, kiln cars are moved to one of four dryers to further reduce the moisture content of the brick. The dryers are heated with waste heat from the cooling section of the kilns. Finally, dried brick are moved from the dryers to one of four kilns. Final evaporation of free water, dehydration, oxidation, vitrification, flashing, and cooling of bricks occurs in the kilns. The kilns are fueled by either natural gas, landfill gas in conjunction with natural gas, or propane during periods of curtailment. ductwork to the AKDF01 and AKDF02 dry injection fabric filters, respectively. Exhaust from LK01 and LK02 exits ductwork to the LKDF01 and LKDF02 dry injection fabric filters. Bricks exiting the kilns are packaged and moved to outside storage prior to distribution by rail and/or truck. Additionally, the facility has a landfill gas recovery facility as part of the operations, where the landfill gas is treated (compressed, de-watered, and dry filtered) prior to being burned in the kilns. The facility operates 24 hours per day, 7 days per week and utilizes 100 percent of the landfill gas extracted from the landfill.

3.1 Emission Units

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
PC01	Primary Crusher	40 CFR 60 Subpart OOO 391-3-1-.02(2)(e)	N/A	None
HM01	Hammermill No. 1		N/A	None
HM02	Hammermill No. 2		N/A	None
LD01	Lingl Dryer No. 1	391-3-1-.02(2)(e) 391-3-1-.02(2)(g)	N/A	None
LD02	Lingl Dryer No. 2		N/A	None
LK01	Lingl Kiln No. 1	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	LKDF01	Dry Injection Fabric Filter (DIFF)
LK02	Lingl Kiln No. 2		LKDF02	Dry Injection Fabric Filter (DIFF)
AD01	Allied Dryer No. 1	391-3-1-.02(2)(e) 391-3-1-.02(2)(g)	N/A	None
AD02	Allied Dryer No. 2		N/A	None
AK01	Allied Kiln No. 1	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	AKDF01	Dry Injection Fabric Filter (DIFF)
AK02	Allied Kiln No. 2		AKDF02	Dry Injection Fabric Filter (DIFF)
GCCS	Landfill Gas Collection & Control System	40 CFR 62 Subpart OOO 391-3-1-.02(2)(ggg)	GCCS	Landfill Gas Collection & Control System (GCCS)
SD01	Sand Plant Fluid Bed Dryer	40 CFR 60 Subpart UUU 391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	PCD03	Baghouse

* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards are intended as a compliance tool and may not be definitive.

B. Equipment & Rule Applicability

Georgia Rule 391-3-1-.02(2)(d), "Fuel Burning Equipment" limits the PM and visible emissions from indirect-fired fuel-burning process units at the facility, including the waste oil heater, natural gas heaters and propane heat units. Since these sources are fired exclusively with natural gas, propane and/or oil, they are expected to comply with applicable PM and visible emissions limits under Rule (d). However, Rule (d) is not applicable to the kilns and dryers as they are direct-fired process units and do not meet the definition of fuel-burning equipment under 391-3-1-.01(cc).

Georgia Rule 391-3-1-.02(2)(g), "Sulfur Dioxide" applies to all the fossil fuel burning process units at this facility, including dryers, kilns, waste oil heater, natural gas and propane heaters. Because the maximum heat input rate of each of these fuel burning units is less than 100 MMBtu/hr, Rule (g) limits the sulfur content of the fuel firing these affected sources to no more than 2.5% by weight to no more than 2.5% by weight. The facility complies with this rule by burning only natural gas, propane, or biogas/landfill gas in the kilns and dryers and compliant fuel in the waste oil heater.

Georgia Rule 391-3-1-.02(2)(e), "Particulate Emissions from Manufacturing Processes" limits the PM emissions from process units based on their construction date and process weight input rate. The affected sources at this facility are in compliance with the applicable PM emissions either they are inherently emitting little PM emissions due to the nature of the processes, or are controlled by PM control devices such as fabric filters/baghouses.

Georgia Rule 391-3-1-.02(2)(b), "Visible Emissions" applies to all point sources at this facility except those subject to other more restrictive or specific rules. Rule (b) limits the visible emissions to no greater than 40% opacity. The affected sources at this facility are in compliance with this visible mission limit either they are inherently emit little visible emissions due to the nature of the processes, or are controlled by PM control devices such as fabric filters/baghouses.

Georgia Rule 391-3-1-.02(2)(n), "Fugitive Emissions" requires that all personnel responsible for any operation, process, handling, transportation, or storage facility which may result in fugitive dust shall take all reasonable precautions to prevent such dust from air borne. In addition, Rule (n) limits the opacity of any fugitive emissions to less than 20%. The facility complies with this rule due to the paved lots and dust suppression equipment if/when necessary.

Cherokee Brick & Tile Company receives landfill gas from The Macon Walker Road Landfill located immediately next to the facility. The landfill is required, based on Tier 1 NMOC calculations, to operate a landfill Gas Collection and Control System (GCCS) regulated under Georgia Rule 391-3-1-.02(2)(ggg), "Existing Municipal Solid Waste Landfills". The landfill currently leases its landfill gas (LFG) rights to the facility. The landfill gas is treated (compressed, de-watered, and dry filtered) prior to being burned 100% by the facility's kilns 24 hours per day and 7 days per week.

Conveyors, bins, bucket elevators, screes, crushers, and mills associated with mineral processing facilities constructed after August 31, 1983 are subject to 40 CFR Part 60, Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants". Constructed after August 31, 1983 but before April 22, 2008, Hammer Mill Nos. 1 and 2 as well as the Primary Crusher are subject to NSPS Subpart OOO and the 15% opacity emission limit.

40 CFR Part 60, Subpart UUU, "Standards of performance for Calciners and Dryers in Mineral Industries" applies to only the calcining and drying of raw materials in the nonmetallic mineral industry. As the facility has the sand fluid bed dryer SD01 constructed after April 23, 1986, this NSPS standard applies to the facility. Through the proper use of the baghouse PCD03, the facility maintain compliance with this NSPS standard by ensuring the PM emissions from the dryer do not exceed 0.057 g/dscm [0.025gr/dscf] and 10% opacity, i.e., the application emission limits under NSPS Subpart UUU.

Due to the addition of four Dry Injection Fabric Filters (LKDF01, LKDF02, AKDF01 & AKDF02) the facility-wide emissions limit of a single HAP and total HAPs combined to less than 10 tons and 25 tons per year, and therefore the facility became a HAP minor source under NESHAP Part 63 rules. This major modification application and permit were issued prior to the promulgation of Subpart JJJJJ.

Emission and Operating Caps:

The Permittee shall only use landfill gas, natural gas or propane as a fuel source for processing brick.

C. Permit Conditions

Condition 3.2.1 was carried from the current permit No. 3251-021-0167-V-04-0.

Condition 3.3.1 was carried over from the current operating permit No. 3251-021-0167-V-04-0.

Condition 3.3.2 was carried from the permit No. 3251-021-0167-V-04-0. This condition incorporates applicable emission and operating requirements under NSPS Subpart OOO for the operation of two belt conveyors (Emission Unit ID Nos. C01 and C02) and two hammer mills (Emission Unit ID Nos. HM01 and HM02) in the existing sand plant constructed in 2007. Located inside a building, these sources are expected to comply with the NSPS.

Condition 3.3.3 was carried from the permit No. 3251-021-0167-V-04-0 and subjects the direct, natural gas-fired fluid bed dryer (Emission Unit ID No. SD01) in the sand plant to the applicable emission limits under NSPS Subpart UUU. The dryer has a maximum heat input rating of 2.25 mmBtu/hr and maximum processing rate of 3 tons per hour (tph). PM emissions from the dryer are controlled by a pulse-jet baghouse (APCD ID No. PCD03), which allows the dryer to comply with the applicable PM and visible emission limits under NSPS Subpart UUU.

Conditions 3.4.1 through 3.4.4 were carried over from the permit No. 3251-021-0167-V-04-0. The facility is complying with the emission limits in these conditions either by using PM emission control devices such as baghouse, burning low sulfur fuels such as natural gas, propane, landfill gas, or the sources involved are inherently complying with the applicable emissions due to the nature of the processes.

Condition 3.4.5 regulates all the production processes and/or activities with fugitive emissions, and contains the detailed requirements for preventing and reducing fugitive emissions that comply with Rule (n).

Condition 3.5.1 requires the control device to be operated when the kiln is operated.

IV. Testing Requirements (with Associated Record Keeping and Reporting)

A. General Testing Requirements

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days (or sixty (60) days for tests required by 40 CFR Part 63) prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

B. Specific Testing Requirements

Condition 4.2.1 requires the Permittee to conduct a performance test when the Operation, Maintenance and Monitoring (OM&M) plan parameter value is changed.

Condition 4.2.2 requires the Permittee shall conduct a performance test within 60 days after achieving the maximum production rate at which the equipment will be operated, but no later than 180 days after initial startup.

Condition 4.2.3 states every five years, the Permittee shall conduct hydrogen chloride (HCl) and hydrogen fluoride (HF) emission performance tests on either of the Lingl Kiln (LK01 or LK02) and either of the Allied Kiln (AK01 or AK02) to establish current emissions factors per ton of bricks produced.

V. Monitoring Requirements

A. General Monitoring Requirements

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

B. Specific Monitoring Requirements

Condition 5.2.1 was carried over from the permit No. 3251-021-0167-V-04-0. Condition 5.2.1 requires Cherokee Brick & Tile Company to install, calibrate, maintain, and operate a system to continuously monitor and record the flow rate to the landfill gas treatment system at least once every 15 minutes. As an alternative to the continuous flow rate monitor, Condition 5.2.1 allows the Permittee to secure the control device bypass line valve in the closed position with a car-seal or lock-and-key type configuration. At least once per month, the Permittee will visually inspect the seal or closure mechanism to ensure that the valve is maintained in the closed position and the gas flow is not diverted through the bypass line. The Permittee will keep a record of each monthly inspection. This requirement does not apply if there is no system in place to bypass the treatment system.

Condition 5.2.2 requires the Permittee to perform a daily check of visible emissions (VE) from these source and other sources also listed in the condition. The condition also details the monitoring requirements and procedures.

Condition 5.2.3 pertains to the Permittee demonstrating the continuous compliance using the Dry Injection Fabric Filters.

Condition 5.2.4 was carried over from the current permit for the Permittee to maintain and operate a CMS system according to the Operation Maintenance and Monitoring (OM&M) plan for the operation of each of the kilns.

Condition 5.2.5 identifies that both Lingl kilns are subject to CAM.

Condition 5.2.6 specifies the performance criteria for the control systems serving the kilns under CAM rules.

Condition 5.2.7 monitoring requirements have been revised or updated to accommodate the addition of the Dry Injection Fabric Filters (LKDF01, LKDF02, AKDF01, AKDF02).

Condition 5.2.8 requires the Permittee to once per day inspect all emission points from the emission units listed in Table 3.1 for which no air pollution control device (APCD) is utilized and all emission points from emission units added or replaced in accordance with the provisions of Sections 7.1 & 7.2 for which no APCD is utilized.

Condition 5.2.9 states the Permittee shall determine hydrated lime specifications, amounts and injection feed rates and required supplier certifications for each future delivery of hydrated lime.

C. Compliance Assurance Monitoring (CAM)

Compliance Assurance Monitoring is applicable for both kilns.

VI. Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

B. Specific Record Keeping and Reporting Requirements

Condition 6.2.1 pertains to a written Startup, Shutdown and Malfunction (SSM) Plan for each of the kilns and their respective control devices.

Condition 6.2.2 requires the Permittee to maintain and revise as necessary an Operation Maintenance and Monitoring (OM&M) plan for the operation of each of the kilns and their respective control devices.

Condition 6.2.3 assures the Permittee shall maintain copies of the SSM Plan and OM&M plans including any revisions with records documenting conformance.

Condition 6.2.4 requires the Permittee shall submit an immediate (SSM) report to the Division if any actions taken during a startup, shutdown, or malfunction are not consistent with the SSMP.

Conditions 6.2.5 requires the Permittee to record the production rate of each kiln on a fired-product basis every day. These records will be kept in a permanent form suitable for inspection for a period of at least five (5) years.

Conditions 6.2.6 states that the Permittee shall maintain a record of all actions taken to suppress fugitive dust from hammermills, crushers, roads, storage piles, or any other source of fugitive dust.

Conditions 6.2.7 requires the Permittee shall maintain records of the type and source of each delivery of hydrated lime to be used in the control devices.

Conditions 6.2.8 states the Permittee shall submit a notice to the landfill gas transferee stating that the landfill gas must be combusted in accordance with the provisions of Georgia Rule (ggg).

Condition 6.2.9 was changed to calculate the monthly emissions of hydrogen chloride (HCl) and hydrogen fluoride (HF) per ton of bricks produced. The Permittee shall, also, calculate the facility 12-months rolling total emissions of hazardous air pollutants (HAPs).

VII. Specific Requirements

A. Operational Flexibility

None applicable

B. Alternative Requirements

None applicable

C. Insignificant Activities

None applicable

D. Temporary Sources

None applicable

E. Short-Term Activities

None applicable

F. Compliance Schedule/Progress Reports

No non-compliance issues were indicated by the application.

G. Emissions Trading

None applicable

H. Acid Rain Requirements

None applicable

I. Stratospheric Ozone Protection Requirements

None applicable

J. Pollution Prevention

None applicable

K. Specific Conditions

None applicable

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Template Condition 8.14.1 was updated in September 2011 to change the default submittal deadline for Annual Compliance Certifications to February 28.

Template Condition Section 8.27 was updated in August 2014 to include more detailed, clear requirements for emergency generator engines currently exempt from SIP permitting and considered insignificant sources in the Title V permit.

Template Condition Section 8.28 was updated in August 2014 to more clearly define the applicability of the Boiler MACT or GACT for major or minor sources of HAP.

Addendum to Narrative

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//